



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,121	08/16/2001	Yves Dellmotte	CRT-543(1417SP585)	8727

7590 01/20/2006

Janice Guthrie, PH.D
Baxter Healthcare Corporation
P.O. Box 15210
Irvine, CA 92623-5210

EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,121

Applicant(s)

DELLMOTTE ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-49, 51-55, 57-71, 73, 74 and 76-134 is/are pending in the application.
- 4a) Of the above claim(s) 90-130 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-49, 51-55, 57-71, 73, 74, 76-89 and 131-134 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1771

1. The art rejections over EP 366 564 taken individually or collectively are withdrawn because EP'564 fails to teach or suggest an antithrombic medical material comprising a fibrinogen free non-hydrolyzed fibrin network.
2. The 102/103 art rejections over Rubens (US 5,272,074) are withdrawn in view of the present amendment. However, the art rejections over Rubens in combination with other references are maintained.
3. The 102 art rejections over Delmotte (WO 96/22115) are withdrawn in view of the present amendment and changed to 103 art rejections.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 46-49, 51-55, 57-71, 73-74, 76-89, and 131-134 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by "a different diameter in the range of about 10 microns to greater than about 20 microns". Do Applicants want to convey the two diameters which fall into the two ranges, one from 10 to 20 microns and another above 20 microns?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1771

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 46-49, 51-55, 57-71, 78-83, 89 and 131-134 are rejected under 35

U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Clapper (US 5,744,515) as evidenced by EP 366 564. Rubens teaches a medical device comprising a polymeric material coated with a layer of thermally denatured fibrinogen (abstract). The fibrin network is free of unbound fibrinogen (column 6, lines 17-19). The fibrinogen is converted into the fibrin, which reads on Applicants' fibrin network containing reacted fibrinogen (column 3, lines 30-35). Likewise, it is clearly apparent that the pores of the polymeric network are free of fibrinogen as well. The polymeric material has a thickness of 0.10 cm or 10 mm within the claimed range (column 5, lines 65-66). The fibrin layer has one surface in contact with the polymeric material and another surface further cross-linked by additional fibrinogen and factor XIII (abstract). The fibrin network is provided with cells and protein (column 4, lines 15-18, 43-45). The polymeric material is formed from expanded polytetrafluoroethylene (ePTFE) (column 2, lines 45-50), which would be inherently hydrophobic and substantially has at least two pores spaced from one another for define a node spacing because Rubens uses the ePTFE to form a support material as Applicants, therefore, it is not seen that the support material would have performed differently than that of the present invention in terms of hydrophobic properties and pore structure and node spacing. The fibrin coating is thin and uniform (column 3, lines 23-24), which reads on Applicants' uniform and

homogeneous fibrin network. Rubens appears to use a solution containing Factor XIII, a fibrinogen solution, calcium chloride with the concentrations within the claimed ranges to form the fibrin layer. Rubens discloses the calcium content having a concentration of 2 mM, which is equivalent to 80 $\mu\text{g}/\text{cm}^3$. The medical device of Rubens serves for the same purposes. Rubens does not specifically disclose the ePTFE having at least two pores having a different diameter in range of about 10 microns to greater than about 20 microns. Rubens does not specifically disclose the ePTFE having the pores extending through its thickness, the node spacing from 5 μm to 100 μm wherein the pores have at least two pores having a different diameter in the range of about 10 microns to greater than about 20 microns. Clapper teaches a vascular graft comprising an ePTFE support having the pores extending through the thickness of the support, an average size from 5 microns to 1 mm and the node spacing of 60 μm (column 2, lines 28-30 and column 9, lines 5-10). In view of an extremely broad range of an average size as disclosed by Clapper, it is technically possible and obvious for the pores to have randomly at least two pores, one with a pore size over 20 microns and another with a pore size below 20 microns. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ePTFE having the pores extending through its thickness and the node spacing and the two pores with different pore sizes as taught by Clapper motivated by the desire to promote the cell attachment.

Rubens does not specifically disclose the fibrin network extending into each pore of the ePTFE. However, EP 366 564 (EP'564) evidences that the fibrin

network extends into the pores of the ePTFE substrate by filling the substrate with the fibrinogen. Therefore, it is the examiner's position that extending of the fibrin network into each pore of the ePTFE substrate would be inherently present in accordance with the saturating process disclosed in the Rubens reference.

Rubens does not specifically teach how far the fibrin network extends through one pore of the support. Since the depth of the support through which the fibrin network extends is recognized as a result-effective variable, differences in the depth of the support will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such depth is critical or provides unexpected results. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the element wherein the fibrin network permeates through the pores to a depth of the support instantly claimed motivated by the desire to promote the adhesion between the support and fibrin network. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically teach the thickness of the cross-linked fibrin network. However, Rubens discloses the desired thickness of the fibrin network can be obtained by varying time, temperature and protein concentration (column 4, lines 10-14). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the cross-linked fibrin network having a thickness within the claimed range

because such would be recognized by one skilled in the art as dependent upon the intended use of the product. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art. The same token is applied to the void volume of the fibrin network and the alveoli thickness. The desired void volume and alveoli thickness can be obtained by varying time, temperature and protein concentration. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the void volume and alveoli thickness within the claimed ranges because such would be recognized by one skilled in the art as dependent upon the intended use of the product. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically teach the fibronectin content in the fibrin network. However, Rubens discloses that the addition of the fibronectin promotes the endothelial cell attachment (column 4, lines 40-45). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the fibronectin content within the claimed range motivated by the desire to promote the endothelial cell attachment. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically disclose a network of adjacent alveoli, bonding between the cells or protein with the fibrin, and moisture content. However, it

appears that the vascular graft of Rubens as modified by Clapper and EP 564 meets all the structural limitations as required by the claim 46 (see discussion above).

Therefore, it is the examiner's position that a network of adjacent alveoli, bonding between the cells or protein with the fibrin, and moisture content would be inherently present so as to enable the medical device to effectively function as a vascular graft.

This is in line with *Ex parte Tummers et al.* 137 USPQ 444 which holds that if the chemical composition of the claimed article of manufacture recited in the claims is the same as the identical structure of the prior art, it is immaterial that the applicant recognized different advantages flowing therefrom than did the prior art. The recitation that the element is a "an filter" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

8. Claims 73, 74, 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Clapper (US 5,744,515) as evidenced by EP 366 564, as applied to claim 72, further in view of Lamuraglia (US 5,824,080) as evidenced by Rudolph et al (US 5,242,792). Rubens does not specifically disclose the ePTFE having the pores partially treated with glycerol, sugar and mixtures thereof. Lamuraglia teaches a vascular graft comprising an ePTFE support being treated with lyophilization before implantation to eliminate the vessel graft antigens and preserve the vessel functions (column 2, lines 28-30 and column 9, lines 5-10).

Art Unit: 1771

Rudolph et al (US 5,242,792) evidence that lyophilization is a process of treating the cells with sugar and glycerol. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ePTFE lyophilized before implantation to eliminate the vessel graft antigens and preserve the vessel functions.

9. Claims 84-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Clapper (US 5,744,515) as evidenced by EP 366 564, as applied to claim 46 above in view of WO 96/22115. Rubbens does not specifically disclose the fibrin membrane comprising a second fibrin network superimposed on a first fibrin network. Delmotte teaches a fibrin delivery device comprising a fibrin film that has two or more fibrin layers (column 6, lines 30-35). The fibrin layers, each comprise pores with different pore sizes (column 14, lines 10-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the fibrin membrane having two fibrin layers with different pore sizes motivated by the desire to provide the fibrin membrane having a double coating, one for a biomechanical barrier coating and another for achievement of hemostasis and wound repair.

10. Claims 46-49, 51-55, 57-71, 78-83, 89 and 131-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Brauker et al (US 5,882,354) and Clapper (US 5,744,515) as evidenced by EP 366 564. Rubens teaches a medical device comprising a polymeric material coated with a layer of thermally denatured fibrinogen (abstract). The fibrin network is free of

unbound fibrinogen (column 6, lines 17-19). The fibrinogen is converted into the fibrin, which reads on Applicants' fibrin network containing reacted fibrinogen (column 3, lines 30-35). Likewise, it is clearly apparent that the pores of the polymeric network are free of fibrinogen as well. The polymeric material has a thickness of 0.10 cm or 10 mm within the claimed range (column 5, lines 65-66). The fibrin layer has one surface in contact with the polymeric material and another surface further cross-linked by additional fibrinogen and factor XIII (abstract). The fibrin network is provided with cells and protein (column 4, lines 15-18, 43-45). The polymeric material is formed from expanded polytetrafluoroethylene (ePTFE) (column 2, lines 45-50), which would be inherently hydrophobic and substantially has at least two pores spaced from one another for define a node spacing because Rubens uses the ePTFE to form a support material as Applicants, therefore, it is not seen that the support material would have performed differently than that of the present invention in terms of hydrophobic properties and pore structure and node spacing. The fibrin coating is thin and uniform (column 3, lines 23-24), which reads on Applicants' uniform and homogeneous fibrin network. Rubens appears to use a solution containing Factor XIII, a fibrinogen solution, calcium chloride with the concentrations within the claimed ranges to form the fibrin layer. Rubens discloses the calcium content having a concentration of 2 mM, which is equivalent to 80 $\mu\text{g}/\text{cm}^3$. The medical device of Rubens serves for the same purposes. Rubens does not specifically disclose the ePTFE having at least two pores having a different diameter in range of about 10 microns to greater than about 20 microns. Brauker,

however, teaches the use of an ePTFE in a vascular structure wherein the ePTFE has at least 50% of the pores having an average size of approximately 0.6 to 20 microns (column 4, lines 55-58). Likewise, the ePTFE would have up to 50% of the pores having an average size up to 0.6 microns and above 20 microns as well. Accordingly, Brauker teaches that it is possible to use the ePTFE having two pores having different diameters, one with an average pore size from 0.6 to 20 microns and another with an average pore size above 20 microns in the vascular grafts. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ePTFE having the pore size distribution as described by Brauker as the polymeric support material motivated by the desire to promote the successful close vascularization.

Rubens does not specifically disclose the ePTFE having the pores extending through its thickness and the node spacing from 5 μm to 100 μm . Clapper teaches a vascular graft comprising an ePTFE support having the pores extending the thickness of the support, having an average size from 5 microns to 1 mm and the node spacing of 60 μm (column 2, lines 28-30 and column 9, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ePTFE having the pores extending through its thickness and the node spacing as taught by Clapper motivated by the desire to promote the cell attachment.

Rubens does not specifically disclose the fibrin network extending into each pore of the ePTFE. However, EP 366 564 (EP'564) evidences that the fibrin

network extends into the pores of the ePTFE substrate by filling the substrate with the fibrinogen. Therefore, it is the examiner's position that extending of the fibrin network into each pore of the ePTFE substrate would be inherently present in accordance with the saturating process disclosed in the Rubens reference.

Rubens does not specifically teach how far the fibrin network extends through one pore of the support. Since the depth of the support through which the fibrin network extends is recognized as a result-effective variable, differences in the depth of the support will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such depth is critical or provides unexpected results. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the element wherein the fibrin network permeates through the pores to a depth of the support instantly claimed motivated by the desire to promote the adhesion between the support and fibrin network. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically teach the thickness of the cross-linked fibrin network. However, Rubens discloses the desired thickness of the fibrin network can be obtained by varying time, temperature and protein concentration (column 4, lines 10-14). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the cross-linked fibrin network having a thickness within the claimed range

because such would be recognized by one skilled in the art as dependent upon the intended use of the product. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art. The same token is applied to the void volume of the fibrin network and the alveoli thickness. The desired void volume and alveoli thickness can be obtained by varying time, temperature and protein concentration. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the void volume and alveoli thickness within the claimed ranges because such would be recognized by one skilled in the art as dependent upon the intended use of the product. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically teach the fibronectin content in the fibrin network. However, Rubens discloses that the addition of the fibronectin promotes the endothelial cell attachment (column 4, lines 40-45). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the fibronectin content within the claimed range motivated by the desire to promote the endothelial cell attachment. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Rubens does not specifically disclose a network of adjacent alveoli, bonding between the cells or protein with the fibrin, and moisture content. However, it

Art Unit: 1771

appears that the vascular graft of Rubens as modified by Clapper, Brauker and EP 564 meets all the structural limitations as required by the claim 46 (see discussion above). Therefore, it is the examiner's position that a network of adjacent alveoli, bonding between the cells or protein with the fibrin, and moisture content would be inherently present so as to enable the medical device to effectively function as a vascular graft. This is in line with *Ex parte Tummers et al.* 137 USPQ 444 which holds that if the chemical composition of the claimed article of manufacture recited in the claims is the same as the identical structure of the prior art, it is immaterial that the applicant recognized different advantages flowing therefrom than did the prior art. The recitation that the element is a "an filter" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

11. Claims 73, 74, 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Brauker et al (US 5,882,354) and Clapper (US 5,744,515) as evidenced by EP 366 564, as applied to claim 72, further in view of Lamuraglia (US 5,824,080) as evidenced by Rudolph et al (US 5,242,792). Rubens does not specifically disclose the ePTFE having the pores partially treated with glycerol, sugar and mixtures thereof. Lamuraglia teaches a vascular graft comprising an ePTFE support being treated with lyophilization before implantation to eliminate the vessel graft antigens and preserve the vessel functions (column 2,

Art Unit: 1771

lines 28-30 and column 9, lines 5-10). Rudolph et al (US 5,242,792) evidence that lyophilization is a process of treating the cells with sugar and glycerol. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ePTFE lyophilized before implantation to eliminate the vessel graft antigens and preserve the vessel functions.

12. Claims 84-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubens (US 5,272,074) in view of Brauker et al (US 5,882,354) and Clapper (US 5,744,515) as evidenced by EP 366 564, as applied to claim 46 above in view of WO 96/22115. Rubens does not specifically disclose the fibrin membrane comprising a second fibrin network superimposed on a first fibrin network. Delmotte teaches a fibrin delivery device comprising a fibrin film that has two or more fibrin layers (column 6, lines 30-35). The fibrin layers, each comprise pores with different pore sizes (column 14, lines 10-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the fibrin membrane having two fibrin layers with different pore sizes motivated by the desire to provide the fibrin membrane having a double coating, one for a biomechanical barrier coating and another for achievement of hemostasis and wound repair.

13. Claims 46, 48, 49, 52, 53, 56-71, 73, 74, 76-89 and 131-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/22115. US 5,989,215 to Delmotte et al is relied on as an equivalent form of WO 96/22115. Delmotte teaches a fibrin delivery device comprising a fibrin film that has two or more layers (column 6, lines 30-35). Delmotte discloses the fibrin film composed of two or more layers wherein

Art Unit: 1771

one outer layer has a closed structure and other layers have an open structure.

Likewise, it is clearly apparent that the fibrin layer can have three or four layers

wherein one outer layer has a closed structure and other layers have an open

structure (column 6, lines 30-35). Figure 6A and 6B show that the fibrin film has at

least two pores spaced from each other by a node. The fibrin film contains less than

1% by weight of fibrinogen in terms of the total dry weight of the fibrinogen and fibrin

(column 6, lines 65-67). Likewise, the fibrin network is substantially free of unbound

fibrinogen covering a portion of the support face. The thickness of the fibrin barrier

material is at least 20 microns within the claimed range (column 6, lines 35-40). The

fibrin network being positioned over a portion of the pores and the fibrin network

substantially uniform and homogeneous (column 5, lines 40-44). The fibrin layer has

a pore with an average pore size of below 20 microns. Likewise, the fibrin layer

would have at least one pore having a pore size greater than 20 microns and at least

one pore having a pore size less than 20 microns. This reads on Applicants' two

pores having a different pore sizes, one below 20 microns and another above 20

microns. When the two fibrin layers are adjacent to each other, it is expected that

the fibrin network at one layer would inherently extend through the pores of the

other fibrin layers. When the two fibrin layers are adjacent to each other, it is

expected that the fibrin network at one layer would inherently extend through the

pores of the other fibrin layers. Delmotte does not specifically teach how far the

fibrin network extends through the pores of the support. Since the depth of the

support through which the fibrin network extends is recognized as a result-effective

Art Unit: 1771

variable, differences in the depth of the support will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such depth is critical or provides unexpected results. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the element wherein the fibrin network permeates through the pores to a depth of the support instantly claimed motivated by the desire to promote the adhesion between the support and fibrin network. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

It appears that Delmotte uses the same solutions to form the fibrin membrane and the medical material of Delmotte serves for the same purposes. Therefore, it is the examiner's position that a network of adjacent alveoli, cell structure, moisture content, fibronectin content, calcium content would be inherently present so as to enable the medical device to effectively function as an implant, an artificial skin. This is in line with *Ex parte Tummers et al.* 137 USPQ 444 which holds that if the chemical composition of the claimed article of manufacture recited in the claims is the same as the identical structure of the prior art, it is immaterial that the applicant recognized different advantages flowing therefrom than did the prior art. The fibrin layer contains water soluble proteins and sugars (column 7, lines 10-15, column 8, lines 5-15). The fibrin layer itself is a biocompatible support (column 5, lines 25-27). The recitation that the element is a "an filter" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where

the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Response to Arguments

14. Applicants argue that nowhere in Rubens disclose a substrate having pores with varying diameter sizes. This is true. However, Clapper which is relied on as a secondary reference rectifies the missing feature. Clapper discloses a vascular graft comprising an ePTFE support having the pores extending the thickness of the support, having an average size from 5 microns to 1 mm and the node spacing of 60 μm (column 2, lines 28-30 and column 9, lines 5-10). In view of an extremely broad range of an average size as disclosed by Clapper, it is technically possible and obvious for the pores of the ePTFE to have at least two pores, one with a pore size over 20 microns and another with a pore size below 20 microns. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ePTFE having two pores with different pore sizes as taught by Clapper because such is technically possible and obvious based on the extremely broad range of an average size from 5 microns and 1 mm.

Applicants further argue that nowhere in Rubens disclose the distance which the fibrin extends about 2 to 20 microns into each pore. Rubens as evidenced by EP'564 discloses the fibrin network extending into the pores of the support. However, Rubens does not specifically teach how far the fibrin network extends through one pore of the support. Since the depth of the support through which the

fibrin network extends is recognized as a result-effective variable, differences in the depth of the support will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such depth is critical or provides unexpected results. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the element wherein the fibrin network permeates through the pores to a depth of the support instantly claimed motivated by the desire to promote the adhesion between the support and fibrin network. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Applicants argue that Delmotte teaches away from a spurt substrate for a fibrin layer because Delmotte discloses a self-standing fibrin film. The examiner disagrees. Delmotte does not limit the self-standing fibrin film being a single layer. Delmotte also discloses a self-standing fibrin film being a multilayer film comprising two or more layers. One of the layers reads on Applicants' support and other layer Applicants' fibrin layer.

Applicants argue that Clapper teaches away from a fibrin coated substrate because Clapper discloses that a vascular graft containing fibrin glue makes the graft unsuitable for medical use. The arguments are not found persuasive for patentability for two reasons. First, it is reminded that Clapper is relied on as secondary reference, *not* a primary reference in the formulation of the rejections. Rubens discloses the fibrin coated substrate. In view of the teachings of Clapper,

Art Unit: 1771

one skilled in the art would be motivated to use the ePTFE support having the pores extending the thickness of the support, an average size from 5 microns to 1 mm and the node spacing of 60 μm as a support material for the vascular grafts in order to promote the cell attachment. Second, Clapper has no disclosure whatsoever directed to the use of the ePTFE as the support material making the vascular grafts unsuitable for medical use. Accordingly, Clapper is properly combinable with Rubens. Applicants have reiterated positions taken with respect to the combination with other references, the examiner's comments set forth above are equally pertinent in the support of these rejections as well.

Conclusion

15. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1771

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HA VO
PRIMARY EXAMINER**